

REMARKS

Reconsideration and timely allowance of the pending claims, in view of the following remarks, are respectfully requested.

In the pending Office Action, the Examiner rejected claims 1-5, under 35 U.S.C. §103(a), as being unpatentable over Takehisa '775 (U.S. Patent No. 4,949,775) in view of Nishikawa '566 (U.S. Patent No. 6,742,566); rejected claim 6, under 35 U.S.C. §103(a), as being unpatentable over Nishikawa '566 in view of Ueno '467 (U.S. Patent No. 5,121,467) and Kitamura '663 (U.S. Patent No. 4,989,663); and rejected claims 7-8, under 35 U.S.C. §103(a), as being unpatentable over Nishikawa '566 in view of Ueno '467, Kitamura '663, and Kuramasu '054 (U.S. Patent No. 6,648,054).

Prior to this Amendment, claims 1-8 were pending, of which claims 1 and 6 were independent. By this Amendment, claims 1-8 have been cancelled without prejudice or disclaimer, thereby rendering the prior art rejections of these claim moot. New claims 9-15 have been introduced to provide a better presentation of the invention. Applicants submit that no new matter has been added. As such, claims 9-15 are currently presented for examination, of which claims 9 and 13 are independent.

To the extent that the prior art rejections may be applied to new claim 9-15, Applicants respectfully traverse the rejections, under 35 U.S.C. §103(a), for the following reasons:

I. Prior Art Rejections Under 35 U.S.C. §103(a).

Independent claim 9, sets forth a die casting machine, comprising, *inter alia*:

a first movable ejecting pin having a first opening, a second opening, an end, a release agent feed path, and a lubricant feed path, the first opening formed at a portion adjacent to the end and connected to the release agent feed path, the second opening formed at a portion adjacent to the end and connected to the lubricant feed path . . .

a controller . . .

(a) wherein, when the fixed die and the movable die are clamped together . . .

(v) *the first opening of the first ejecting pin is directed toward the cavity while the second opening of the first ejecting pin is directed towards the second path . . .*

(b) wherein, when the fixed die and the movable die are clamped together, the controller . . .

(i) *drives the first ejecting pin driver to move the end of the first ejecting pin into the first path,*

(ii) *feeds a powder release agent to the release agent feed path, injects the powder release agent through the first opening into the cavity to deposit the powder release agent on the inner surface of the cavity,*

(iii) *feeds a powder lubricant to the lubricant feed path,* injects the powder lubricant through the second opening into the second path *to coat the inner circumference of the second path of the sleeve,*

(iv) drives the first ejecting pin driver to move a face of the end of the first ejecting pin into alignment with the inner wall of the first path to form a molten metal guide path, and

(v) after completing a casting, *drives the first ejecting pin driver to push the first ejecting pin into the casting to separate the movable die from the casting.*

As indicated above, claim 9 now positively recites the use of a first movable ejecting pin having a first opening, a second opening a release agent feed path, a lubricant feed path, and that the first opening is directed toward the cavity and connected to the release agent feed path and the second opening is directed towards the second path and connected to the lubricant feed path. Claim 1 further recites that the controller causes the deposit of the powder release agent on the inner surface of the cavity, feeds the powder lubricant to coat the inner circumference of the second path of the sleeve and, after completing a casting, drives the first ejecting pin driver to push the first ejecting pin into the casting to separate the movable die from the casting. These features are amply supported by the embodiments disclosed in the Specification. (See, e.g., Specification, page 10, line 2 – page 15, line 15; FIGS. 1, 2).

Moreover, one of the many objects of the invention is to provide a die casting machine that enables the performances of a powder release agent and powder lubricant to be sufficiently exhibited when casting using a powder release agent or lubricant and

enabling the production of stable, quality die casting. (*See, e.g.*, Specification, page 3, lines 3-8).

Unlike the present invention, however, there is nothing in any of the applied §103 references, that teach or suggest the combination of features recited in claim 9. In particular, the Takehisa '775 reference fails to disclose a first movable ejecting pin and its associated features, as required by claim 9. Nor, as indicated by the Examiner, does Takehisa '775 teach the deposition of the powder release agent on the inner surface of the cavity, as required by claim 9.

Similarly, the Nishikawa '566 reference does not teach a first movable ejecting pin and its associated features, as required by claim 9. Specifically, the Nishikawa '566 reference teaches a powder discharging pin 3 which is arranged in a retractable state in which the powder discharging pin 3 can be advanced to and retracted from the runner 23, and the powder discharging pin 3 is provided with a powder introducing passage 31 connected with the powder supply source 5. This powder discharging pin 3 includes: a first opening section 311 to open the powder introducing passage 31 toward the product cavity section 21 and a second opening section 312 to open the powder introducing passage 31 toward the plunger sleeve section 22, when the powder discharging pin 3 is advanced into the runner 23. (*See, e.g.*, Nishikawa '566, col. 4, line 67 – col. 5, line 10; FIG. 1). There is, however, no mention of a lubricant feed path of the ejecting pin – much less that the second opening of the ejecting pin is directed towards a second path and connected to the lubricant feed path, as required by claim 9.

Equally noteworthy is the fact that Nishikawa '566 teaches the use of a passage 31 for introducing the powder release agent 6 into the product cavity section 21, a metallic mold forming section 20, and a plunger sleeve section 22. As evidenced by the recitations of claim 9, the powder release agent is *not* introduced into the sleeve as the sleeve section is coated by the lubricant agent to facilitate the smooth introduction of the molten metal into the cavity through the sleeve. Not only does the Nishikawa '566 not comport with the requirements of claim 9, it teaches away from the claimed invention.

Along these lines, Applicants note that, as best understood, the remaining references, such as Ueno '467, Kitamura '663, and Kuramasu '054, do not cure the deficiencies noted above. As such, none of the applied references, whether taken alone or in any reasonable combination, can be reasonably construed to render claim 9 unpatentable, under 35 U.S.C. §103(a).

For at least the reasons discussed above, Applicants submit that claim 9 is patentably distinguishable over all the applied references. Moreover, because claims 10-12 depend either directly or indirectly from claim 9, claims 10-12 are patentable for at least the reasons presented with respect to claim 9 in addition to their recitation of further limitations.

Furthermore, because independent claim 13 positively recites some features similar to claim 9, claim 13 is patentable for at least the reasons presented with respect to claim 9. Additionally, because claims 14-15 depend from claim 13, claims 14-15 are patentable for at least the reasons presented with respect to claims 9 and 13, as well as their additional recitations.

II. Conclusion.

In view of the foregoing and all matters having been addressed, Applicants respectfully request the entry of this Amendment, the Examiner's reconsideration of this application, and the immediate allowance of pending claims 9-15.


Applicants' Counsel remains ready to assist the Examiner in any way to facilitate and expedite the prosecution of this matter.

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Respectfully submitted,

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